

PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
MCA Winter 2017 – 18 Examination

Semester: 1
Subject Code: 05201103
Subject Name: Fundamentals of Computer Organization

Date: 29/12/2017
Time: 02:00 pm to 04:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Answer the followings.**A. Write short notes.****(05)**

1. $(5238)_{10} = (?)_{16}$
2. What is RAM?
3. What is ROM?
4. Explain cache memory.
5. What is role of ALU?

B. Multiple choice type questions. (Each of 01 marks)**(10)**

1. Which memory device is generally made of semi-conductors?
 A. RAM C. Hard-disk
 B. Floppy disk D. CD disk
2. What is the resultant binary of the decimal problem $4*8 = ?$
 A. 101010 C. 100000
 B. 001111 D. 110011
3. $(6)_{10} = (?)_2$
 A. 0011 C. 0110
 B. 1010 D. 1111
4. $(0101)_2 = ()_8$
 A. 10 C. 21
 B. 5 D. 8
5. $(1101011)_2 = (?)_{16}$
 A. 6B C. C5
 B. A9 D. BC
6. Which of the following expression is in sum-product (SOP) form?
 A. $(A+B)(C+D)$ C. $(A)B(CD)$
 B. $(AB)+(CD)$ D. AB
7. Fastest memory access element _____
 A. Cache C. RAM
 B. Accumulators D. Hard Disk
8. Full form of ALU _____.
 A. Accumulators C. Registers
 B. Heap D. Arithmetic Logic Unit
9. _____ is used to store data in registers.
 A. D flip flop C. JK flip flop
 B. RS flip flop D. None of the mentioned
10. _____ is indicate distributive law.
 A. $A(B+C) = AB + AC$ C. $A(B+C) = (A+B)C$
 B. $(AB)C = A(BC)$ D. $AB=BC \Rightarrow A=C$

Q.2 Answer the followings.**(15)**

1. Explain Floating point Representation. **(2)**
2. Explain basic laws of Boolean algebra. **(2)**
3. Explain Demorgan's theorem. **(2)**
4. What is flip flop? Explain any two flip flop in detail. **(3)**
5. Explain instruction format with diagram. **(3)**
6. Write a note on Magnetic Disk Memories. **(3)**

Q.3 Answer the following. (Any three)

(15)

1. What is multiplexer? Explain 8 x 1 multiplexer with diagram and truth table.
2. Write a note on Immediate and Register addressing modes.
3. write a note on Direct and Register indirect addressing modes.
4. How many types of buses? Explain any two bus with its functionality.

Q.4 Answer the following.

A. List all optical storage devices. Explain any one in detail.

(05)

B. Explain instruction format of Intel 8086 microprocessor and Draw architecture of Intel 8086 processor.

(10)

OR

B. Explain following instruction:

(a) MOV (b) ADD (c) DEC (d) CMP (e) AND (f) NOT (g) IMC (h) OR (i) NEG (j) DIV

(10)